M. Rao

RAW SEQUENCE LISTING   DATE: 05/21/2002
PATENT APPLICATION: US/09/558,421   TIME: 14:15:59

Input Set : **N:\Crf3\RULE60\09558421.raw**
Output Set: **N:\CRF3\05212002\I558421.raw**

SEQUENCE LISTING
```
  3  (1) GENERAL INFORMATION:
  5       (i) APPLICANT: Chatterjee, Deb K.
  7      (ii) TITLE OF INVENTION: Mutant DNA Polymerases and Uses Thereof
  9     (iii) NUMBER OF SEQUENCES: 43
 11      (iv) CORRESPONDENCE ADDRESS:
 12           (A) ADDRESSEE: STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.
 13           (B) STREET: 1100 New York Avenue, N.W., Suite 600
 14           (C) CITY: Washington
 15           (D) STATE: DC
 16           (E) COUNTRY: USA
 17           (F) ZIP: 20005
 19       (v) COMPUTER READABLE FORM:
 20           (A) MEDIUM TYPE: Floppy disk
 21           (B) COMPUTER: IBM PC compatible
 22           (C) OPERATING SYSTEM: PC-DOS/MS-DOS
 23           (D) SOFTWARE: PatentIn Release #1.0, Version #1.30
 25      (vi) CURRENT APPLICATION DATA:
 26           (A) APPLICATION NUMBER: US/09/558,421          C-->
 27           (B) FILING DATE: 26-Apr-2000                   C-->
 28           (C) CLASSIFICATION:
 39     (vii) PRIOR APPLICATION DATA:
 31           (A) APPLICATION NUMBER: US/08/576,759
 32           (B) FILING DATE:
 36           (A) APPLICATION NUMBER: US 08/525,057
 37           (B) FILING DATE: 08-SEP-1995
 40           (A) APPLICATION NUMBER: US 08/537,397
 41           (B) FILING DATE: 02-OCT-1995
 43    (viii) ATTORNEY/AGENT INFORMATION:
 44           (A) NAME: Esmond, Robert W.
 45           (B) REGISTRATION NUMBER: 32,893
 46           (C) REFERENCE/DOCKET NUMBER: 0942.3600002
 48      (ix) TELECOMMUNICATION INFORMATION:
 49           (A) TELEPHONE: 202-371-2600
 50           (B) TELEFAX: 202-371-2540
 53  (2) INFORMATION FOR SEQ ID NO: 1:
 55       (i) SEQUENCE CHARACTERISTICS:
 56           (A) LENGTH: 40 base pairs
 57           (B) TYPE: nucleic acid
 58           (C) STRANDEDNESS: both
 59           (D) TOPOLOGY: both
 61      (ii) MOLECULE TYPE: cDNA
 66      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1:
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ENTERED

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 68 CAGGATCCAC ATGGTGCTTA ACGGCGACAT CCACACTAAG                          40
 70 (2) INFORMATION FOR SEQ ID NO: 2:
 72      (i) SEQUENCE CHARACTERISTICS:
 73          (A) LENGTH: 27 base pairs
 74          (B) TYPE: nucleic acid
 75          (C) STRANDEDNESS: both
 76          (D) TOPOLOGY: both
 78      (ii) MOLECULE TYPE: cDNA
 83      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 2:
 85 GTTAACTTCT TGTGCGGTCT CAATGAC                                        27
 87 (2) INFORMATION FOR SEQ ID NO: 3:
 89      (i) SEQUENCE CHARACTERISTICS:
 90          (A) LENGTH: 11 amino acids
 91          (B) TYPE: amino acid
 92          (C) STRANDEDNESS: single
W--> 93          (D) TOPOLOGY: Not Relevant
 95      (ii) MOLECULE TYPE: protein
100      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 3:
102      Ala Lys Ala Ile Thr Phe Gly Ile Leu Tyr Gly
103      1               5                   10
105 (2) INFORMATION FOR SEQ ID NO: 4:
107      (i) SEQUENCE CHARACTERISTICS:
108          (A) LENGTH: 11 amino acids
109          (B) TYPE: amino acid
110          (C) STRANDEDNESS: single
W--> 111          (D) TOPOLOGY: Not Relevant
113      (ii) MOLECULE TYPE: protein
118      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 4:
120      Ala Lys Thr Phe Ile Tyr Gly Phe Leu Tyr Gly
121      1               5                   10
123 (2) INFORMATION FOR SEQ ID NO: 5:
125      (i) SEQUENCE CHARACTERISTICS:
126          (A) LENGTH: 11 amino acids
127          (B) TYPE: amino acid
128          (C) STRANDEDNESS: single
W--> 129          (D) TOPOLOGY: Not Relevant
131      (ii) MOLECULE TYPE: protein
136      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 5:
138      Ala Lys Thr Ile Asn Phe Gly Val Leu Tyr Gly
139      1               5                   10
141 (2) INFORMATION FOR SEQ ID NO: 6:
143      (i) SEQUENCE CHARACTERISTICS:
144          (A) LENGTH: 11 amino acids
145          (B) TYPE: amino acid
146          (C) STRANDEDNESS: single
W--> 147          (D) TOPOLOGY: Not Relevant
149      (ii) MOLECULE TYPE: protein
154      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 6:
156      Ala Lys Ala Ile Asn Phe Gly Leu Ile Tyr Gly
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Input Set : N:\Crf3\RULE60\09558421.raw
Output Set: N:\CRF3\05212002\I558421.raw

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      157      1                5                    10
      159 (2) INFORMATION FOR SEQ ID NO: 7:
      161      (i) SEQUENCE CHARACTERISTICS:
      162           (A) LENGTH: 4 amino acids
      163           (B) TYPE: amino acid
      164           (C) STRANDEDNESS: single
W--> 165           (D) TOPOLOGY: Not Relevant
      167      (ii) MOLECULE TYPE: protein
      172      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 7:
      174      Thr Phe Ile Tyr
      175      1
      177 (2) INFORMATION FOR SEQ ID NO: 8:
      179      (i) SEQUENCE CHARACTERISTICS:
      180           (A) LENGTH: 4 amino acids
      181           (B) TYPE: amino acid
      182           (C) STRANDEDNESS: single
W--> 183           (D) TOPOLOGY: Not Relevant
      185      (ii) MOLECULE TYPE: protein
      190      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 8:
      192      Ala Ile Thr Phe
      193      1
      195 (2) INFORMATION FOR SEQ ID NO: 9:
      197      (i) SEQUENCE CHARACTERISTICS:
      198           (A) LENGTH: 4 amino acids
      199           (B) TYPE: amino acid
      200           (C) STRANDEDNESS: single
W--> 201           (D) TOPOLOGY: Not Relevant
      203      (ii) MOLECULE TYPE: peptide
      208      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 9:
      210      Thr Ile Asn Phe
      211      1
      213 (2) INFORMATION FOR SEQ ID NO: 10:
      215      (i) SEQUENCE CHARACTERISTICS:
      216           (A) LENGTH: 45 base pairs
      217           (B) TYPE: nucleic acid
      218           (C) STRANDEDNESS: both
      219           (D) TOPOLOGY: both
      221      (ii) MOLECULE TYPE: cDNA
      226      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 10:
      228 TCAGGCTGCT AAAACATTCA TCTACGGTAT ACTGTATGGT TCTGG           45
      230 (2) INFORMATION FOR SEQ ID NO: 11:
      232      (i) SEQUENCE CHARACTERISTICS:
      233           (A) LENGTH: 33 base pairs
      234           (B) TYPE: nucleic acid
      235           (C) STRANDEDNESS: both
      236           (D) TOPOLOGY: both
      238      (ii) MOLECULE TYPE: cDNA
      243      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 11:
      245 GTAGAGGACC CCGTAATTAA TGGTCTTGGC CGC                        33
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PATENT APPLICATION: US/09/558,421   TIME: 14:15:59

Input Set : N:\Crf3\RULE60\09558421.raw
Output Set: N:\CRF3\05212002\I558421.raw

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247 (2) INFORMATION FOR SEQ ID NO: 12:
249        (i) SEQUENCE CHARACTERISTICS:
250            (A) LENGTH: 11 amino acids
251            (B) TYPE: amino acid
252            (C) STRANDEDNESS: single
W--> 253        (D) TOPOLOGY: Not Relevant
255      (ii) MOLECULE TYPE: protein
260      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 12:
262       Gly Lys Met Val Asn Phe Ser Ile Ile Tyr Gly
263        1               5                   10
265 (2) INFORMATION FOR SEQ ID NO: 13:
267        (i) SEQUENCE CHARACTERISTICS:
268            (A) LENGTH: 4 amino acids
269            (B) TYPE: amino acid
270            (C) STRANDEDNESS: single
W--> 271        (D) TOPOLOGY: Not Relevant
273      (ii) MOLECULE TYPE: protein
277      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 13:
279       Met Val Asn Phe
280        1
282 (2) INFORMATION FOR SEQ ID NO: 14:
284        (i) SEQUENCE CHARACTERISTICS:
285            (A) LENGTH: 694 base pairs
286            (B) TYPE: nucleic acid
287            (C) STRANDEDNESS: double
288            (D) TOPOLOGY: both
290      (ii) MOLECULE TYPE: DNA (genomic)
293      (ix) FEATURE:
294            (A) NAME/KEY: CDS
295            (B) LOCATION: 2..694
298      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 14:
300 G GAT CCA GAC TGG TGG ATC GTC AGT GCG GAT TAT TCC CAA ATA GAA       46
301   Asp Pro Asp Trp Trp Ile Val Ser Ala Asp Tyr Ser Gln Ile Glu
302    1               5                   10                  15
304 CTC AGA ATC CTC GCT CAT CTC AGT GGT GAT GAG AAC CTT GTG AAG GCC     94
305 Leu Arg Ile Leu Ala His Leu Ser Gly Asp Glu Asn Leu Val Lys Ala
306                 20                  25                  30
308 TTC GAG GAG GGC ATC GAT GTG CAC ACC TTG ACT GCC TCC AGG ATC TAC    142
309 Phe Glu Glu Gly Ile Asp Val His Thr Leu Thr Ala Ser Arg Ile Tyr
310                 35                  40                  45
312 AAC GTA AAG CCA GAA GAA GTG AAC GAA GAA ATG CGA CGG GTT GGA AAG    190
313 Asn Val Lys Pro Glu Glu Val Asn Glu Glu Met Arg Arg Val Gly Lys
314                 50                  55                  60
317 ATG GTG AAC TTC TCT ATA ATA TAC GGT GTC ACA CCG TAC GGT CTT TCT    238
318 Met Val Asn Phe Ser Ile Ile Tyr Gly Val Thr Pro Tyr Gly Leu Ser
319             65                  70                  75
321 GTG AGA CTT GGA ATA CCG GTT AAA GAA GCA GAA AAG ATG ATT ATC AGC    286
322 Val Arg Leu Gly Ile Pro Val Lys Glu Ala Glu Lys Met Ile Ile Ser
323 80                  85                  90                  95
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PATENT APPLICATION: US/09/558,421   TIME: 14:15:59

Input Set : N:\Crf3\RULE60\09558421.raw
Output Set: N:\CRF3\05212002\I558421.raw

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325 TAT TTC ACA CTG TAT CCA AAG GTG CGA AGC TAC ATC CAG CAG GTT GTT    334
326 Tyr Phe Thr Leu Tyr Pro Lys Val Arg Ser Tyr Ile Gln Gln Val Val
327             100                 105                 110
329 GCA GAG GCA AAA GAG AAG GGC TAC GTC AGG ACT CTC TTT GGA AGA AAA    382
330 Ala Glu Ala Lys Glu Lys Gly Tyr Val Arg Thr Leu Phe Gly Arg Lys
331             115                 120                 125
333 AGA GAT ATT CCC CAG CTC ATG GCA AGG GAC AAG AAC ACC CAG TCC GAA    430
334 Arg Asp Ile Pro Gln Leu Met Ala Arg Asp Lys Asn Thr Gln Ser Glu
335             130                 135                 140
338 GGC GAA AGA ATC GCA ATA AAC ACC CCC ATT CAG GGA ACT GCG GCA GAT    478
339 Gly Glu Arg Ile Ala Ile Asn Thr Pro Ile Gln Gly Thr Ala Ala Asp
340         145                 150                 155
342 ATA ATA AAA TTG GCT ATG ATA GAT ATA GAC GAG GAG CTG AGA AAA AGA    526
343 Ile Ile Lys Leu Ala Met Ile Asp Ile Asp Glu Glu Leu Arg Lys Arg
344 160                 165                 170                 175
346 AAC ATG AAA TCC AGA ATG ATC ATT CAG GTT CAT GAC GAA CTG GTC TTC    574
347 Asn Met Lys Ser Arg Met Ile Ile Gln Val His Asp Glu Leu Val Phe
348                 180                 185                 190
350 GAG GTT CCC GAT GAG GAA AAA GAA GAA CTA GTT GAT CTG GTG AAG AAC    622
351 Glu Val Pro Asp Glu Glu Lys Glu Glu Leu Val Asp Leu Val Lys Asn
352             195                 200                 205
354 AAA ATG ACA AAT GTG GTG AAA CTC TCT GTG CCT CTT GAG GTT GAC ATA    670
355 Lys Met Thr Asn Val Val Lys Leu Ser Val Pro Leu Glu Val Asp Ile
356             210                 215                 220
358 AGC ATC GGA AAA AGC TGG TCT TGA                                    694
359 Ser Ile Gly Lys Ser Trp Ser
360         225                 230
363 (2) INFORMATION FOR SEQ ID NO: 15:
365         (i) SEQUENCE CHARACTERISTICS:
366             (A) LENGTH: 230 amino acids
367             (B) TYPE: amino acid
368             (D) TOPOLOGY: linear
370     (ii) MOLECULE TYPE: protein
372     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 15:
374 Asp Pro Asp Trp Trp Ile Val Ser Ala Asp Tyr Ser Gln Ile Glu Leu
375  1               5                  10                  15
377 Arg Ile Leu Ala His Leu Ser Gly Asp Glu Asn Leu Val Lys Ala Phe
378             20                  25                  30
380 Glu Glu Gly Ile Asp Val His Thr Leu Thr Ala Ser Arg Ile Tyr Asn
381             35                  40                  45
383 Val Lys Pro Glu Glu Val Asn Glu Glu Met Arg Arg Val Gly Lys Met
384         50                  55                  60
386 Val Asn Phe Ser Ile Ile Tyr Gly Val Thr Pro Tyr Gly Leu Ser Val
387 65                  70                  75                  80
389 Arg Leu Gly Ile Pro Val Lys Glu Ala Glu Lys Met Ile Ile Ser Tyr
390             85                  90                  95
393 Phe Thr Leu Tyr Pro Lys Val Arg Ser Tyr Ile Gln Gln Val Val Ala
394             100                 105                 110
396 Glu Ala Lys Glu Lys Gly Tyr Val Arg Thr Leu Phe Gly Arg Lys Arg
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VERIFICATION SUMMARY
PATENT APPLICATION: US/09/558,421

DATE: 05/21/2002
TIME: 14:16:00

Input Set : N:\Crf3\RULE60\09558421.raw
Output Set: N:\CRF3\05212002\I558421.raw

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L:27 M:220 C: Keyword misspelled or invalid format, [(B) FILING DATE:]
L:93 M:246 W: Invalid value of Alpha Sequence Header Field, [TOPOLOGY:], SeqNo=3
L:111 M:246 W: Invalid value of Alpha Sequence Header Field, [TOPOLOGY:], SeqNo=4
L:129 M:246 W: Invalid value of Alpha Sequence Header Field, [TOPOLOGY:], SeqNo=5
L:147 M:246 W: Invalid value of Alpha Sequence Header Field, [TOPOLOGY:], SeqNo=6
L:165 M:246 W: Invalid value of Alpha Sequence Header Field, [TOPOLOGY:], SeqNo=7
L:183 M:246 W: Invalid value of Alpha Sequence Header Field, [TOPOLOGY:], SeqNo=8
L:201 M:246 W: Invalid value of Alpha Sequence Header Field, [TOPOLOGY:], SeqNo=9
L:253 M:246 W: Invalid value of Alpha Sequence Header Field, [TOPOLOGY:], SeqNo=12
L:271 M:246 W: Invalid value of Alpha Sequence Header Field, [TOPOLOGY:], SeqNo=13
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L:526 M:246 W: Invalid value of Alpha Sequence Header Field, [TOPOLOGY:], SeqNo=21
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L:951 M:246 W: Invalid value of Alpha Sequence Header Field, [TOPOLOGY:], SeqNo=43